

Work Order ID 81105***81105***

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March-08-12 8:48:47 AM

Item ID: D3391-023 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Mid Tube Assembly
Start Date: 08/03/2012 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 22/03/2012 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: MLJ Date: 12/03/09 Tooling: Date:
QC: Date: SPC (Y/N): Date:
Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D3391	I
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100

0.00

100

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Cut tube to finish length as per Dwg D3391

2-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

3-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

4-Remove .030" from Fwd indexing Ridge as per Dwg D3391

5-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

6-Deburr

7-Drill #30 pilot holes using wearplate Jig.DT8217 Identify Ø0.250" holes with paint marker,
***DO NOT DRILL HOLES #3-19-20 FROM FWD END OF JIG8-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (10 holes) as per Dwg D3391
DO NOT OPEN 2 MOST FWD WEARPLATE HOLES

9-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

02 12/04/02

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	10-Open .375" holes to .438" ***do not open fwd saddle holes***			- DC 12/64/02					
	11-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)								
	12- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021								
	13- Using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.								
	14- Locating from two fwd wearplate holes in D3391-023 drill remaining 6 wearplte holes in D3391-021 using DT8937								
	15- Open 12 wearplate holes in D3391-021 to 0.297" dia.								
	16-Deburr and blow out all chips from inside tube, scribe batch # in D3391-023 at aft end.								

110
110
 QC
 Quality Control

QC5- Inspect part completeness to step on W/O 0.00

Memo 0.00

8/2/04

DC 12/64/03

Dart Aerospace Ltd

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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	Chemical Conversion Coat per QSI005 4.1	0.00							
120									
HandFinish	Memo	0.00							
Hand Finishing									
130	QC7-Inspect Chemical Conversion Coat	0.00							
130									
QC	Memo	0.00							
Quality Control									

Handwritten: 2/13 12-4-4

Handwritten: SQD A-04-04

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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Skidtubes	0.00							
140									
Skidtubes	Memo	0.00							
Skidtubes	1-Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3- Prepare tube for welding 4-Bond web in place as per Dwg D3391 & QSI 015. Adhere for 12 hours) A/R Sikaflex exp: 12-3-13 batch#: M120513 NOTE:ENSURE WEB IS INSERTED IN AFT END OF TUBE								
150	QC5- Inspect part completeness to step on W/O	0.00							
150									
QC	Memo	0.00							
Quality Control									

SAD 12-04-09

JB/RG 12-4-4

1 0 BE 12/04/10

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 Reference:

Accept

N900040100

Setup Start *NS1*
 Stop *NS2*

Cust Item ID:
 Customer:

1
 1

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Skidtubes	0.00							
160									
Skidtubes	Memo	0.00							
Skidtubes	1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush								
170	QC10- Inspect visual per QSI004- ground welds	0.00							
170									
QC	Memo	0.00							
Quality Control									
180	QC5- Inspect part completeness to step on W/O	0.00							
180									
QC	Memo	0.00							
Quality Control									

Handwritten notes:
 12/4/10 12/4/10
 12/4/10 12/4/10

Handwritten note:
 12/4/10

Handwritten note:
 12/4/10

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
185 *185* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo AND REALODINE AS PER PAR09-043	0.00 0.00							
190 *190* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: <u>1:10</u> OVEN TEMPERATURE: <u>320°F</u> FINISH TIME: <u>1:40</u>	0.00 0.00							
200 *200* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							

m-l / 12-4-17

m-l 12/04/17

m 12/11/34

1x d Unloaded

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Skidtubes	0.00							
210									
Skidtubes	Memo	0.00							
Skidtubes	✓ 1- insert D3391-021 into D3391-23								
	✓ 2- insert T-pins into first and third fwd saddle holes								
	✓ 3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364								
	✓ 4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos								
	✓ 5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415								
	✓ 6- deburr, re-alodine and blow out chips								
	✓ 7- press fit D3591-1 spacers using DT9416 starting from 0.500" side								
220	QC5- Inspect part completeness to step on W/O	0.00							
220									
QC	Memo	0.00							
Quality Control									

1x 6 12/04/12

5/12/04/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	HandFinishing	0.00							
230	HandFinish	0.00				1x	4		ll 12/04/12
Hand Finishing	Memo Install Inserts as per Dwg								
240	QC5- Inspect part completeness to step on W/O	0.00							
240	QC	0.00							5/12/04/12
Quality Control	Memo								
250	Identify as per dwg & Stock Location: <u>w16</u>	0.00							
250	Packaging	0.00							0412-742-043/1379961
Packaging	Memo					1x	4		ll 12/04/12

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Item ID: D3391-023

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Mid Tube Assembly

Stop ***NS2***

Start Date: 08/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC21- Final Inspection - Work Order Release

0.00

260

QC

Memo

0.00

Quality Control

12/4/19

MF
12-04-18

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Picklist Print

March-08-12 8:48:51 AM

Page 1

Work Order ID: 81105

81105

Parent Item: D3391-023

D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.10.20New Issue KJ/EC
 IPP B06.02.10ECN773 dwg rev.D EC
 IPP C 07.03.20 rev F dwg EC
 IPP D 07.03.28 re-format EC
 IPP E 07.10.31 ecn 1053P EC
 IPP Rev:F ECN 1056 07-11-13 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP
 Rev:J add in seq 140 expire date &b# sikaflex DD 10.02.17 verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-100 *D2500-1-100* Skidtube Extrusion		Manufactured	No			100	Each	36.0000	1	1			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				HALL				36					
				50251				36					
D3391-021 *D3391-021* Fwd Tube Assembly		Manufactured	No			100	Each	0.0000	1	1			
D3389-1 *D3389-1* Web		Manufactured	No			140	Each	6.0000	1	1			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG				6					
				80909				6					

**

DL 12/04/02

**

(x1) 12/04/15

**

1 12/4/4

Dart Aerospace Ltd

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3681-1

Manufactured No

160

Each

107.0000

5

5

D3681-1

Spacer

BE 12/04/10

Location

Loc Qty

Loc Code

LG

63

80361

63

5

LG001

44

68958

2

69893

2

71845

2

74874

1

76004

2

77501

35

D3591-1

Manufactured No

210

Each

55.0000

2

2

D3591-1

Bushing

12/04/10

Location

Loc Qty

Loc Code

FP

54

77496

14

80377

40

ST055

1

57350

1

XZ

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D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

230

Each

4,855.000

20

20

AI S4-1032-130

Insert

ML

12/04/18

Location

Loc Qty

Loc Code

ST280

681

119084

116

120671

565

ST281

4174

120410

174

120807

2000

120837

2000

X20

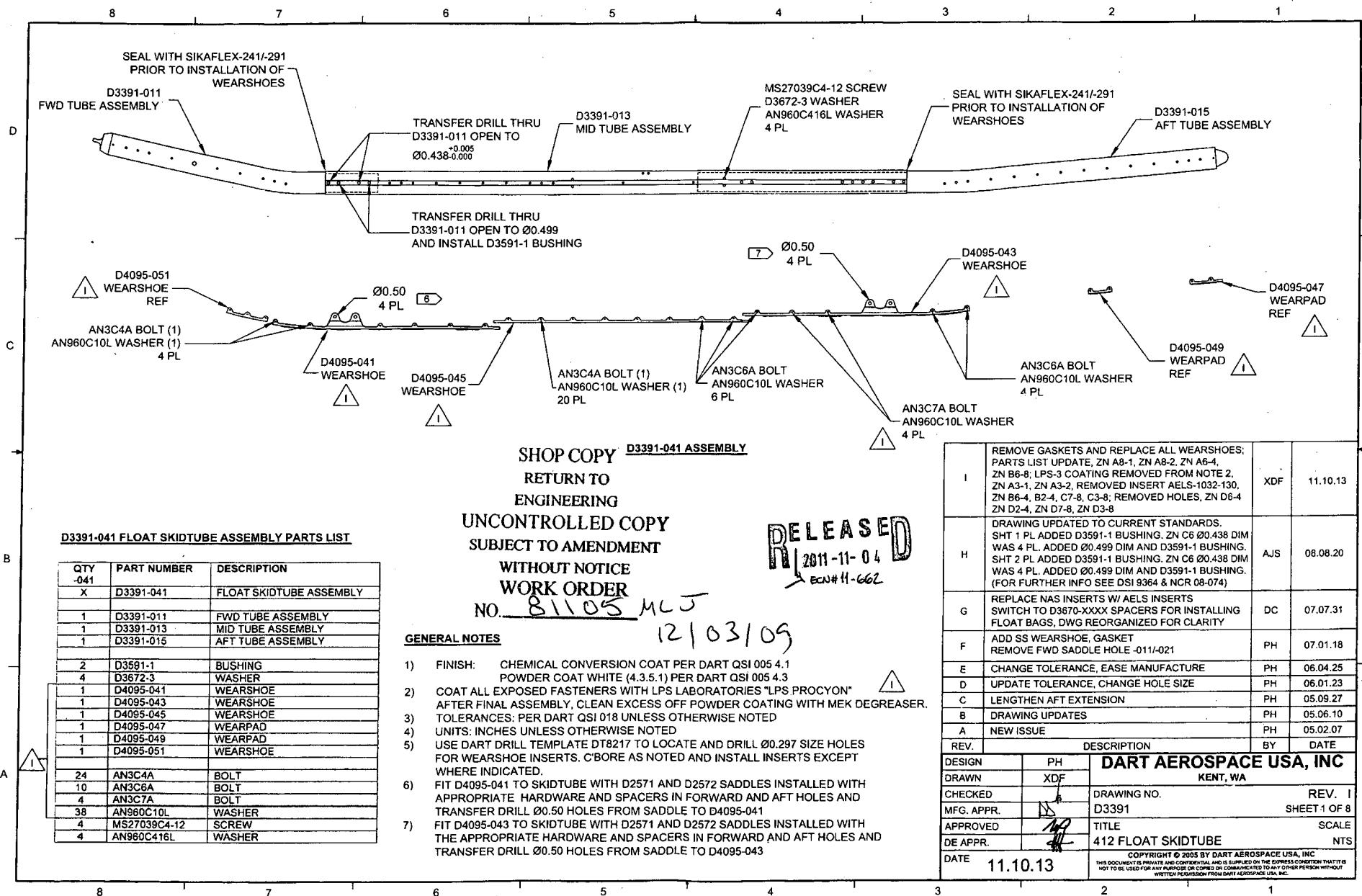
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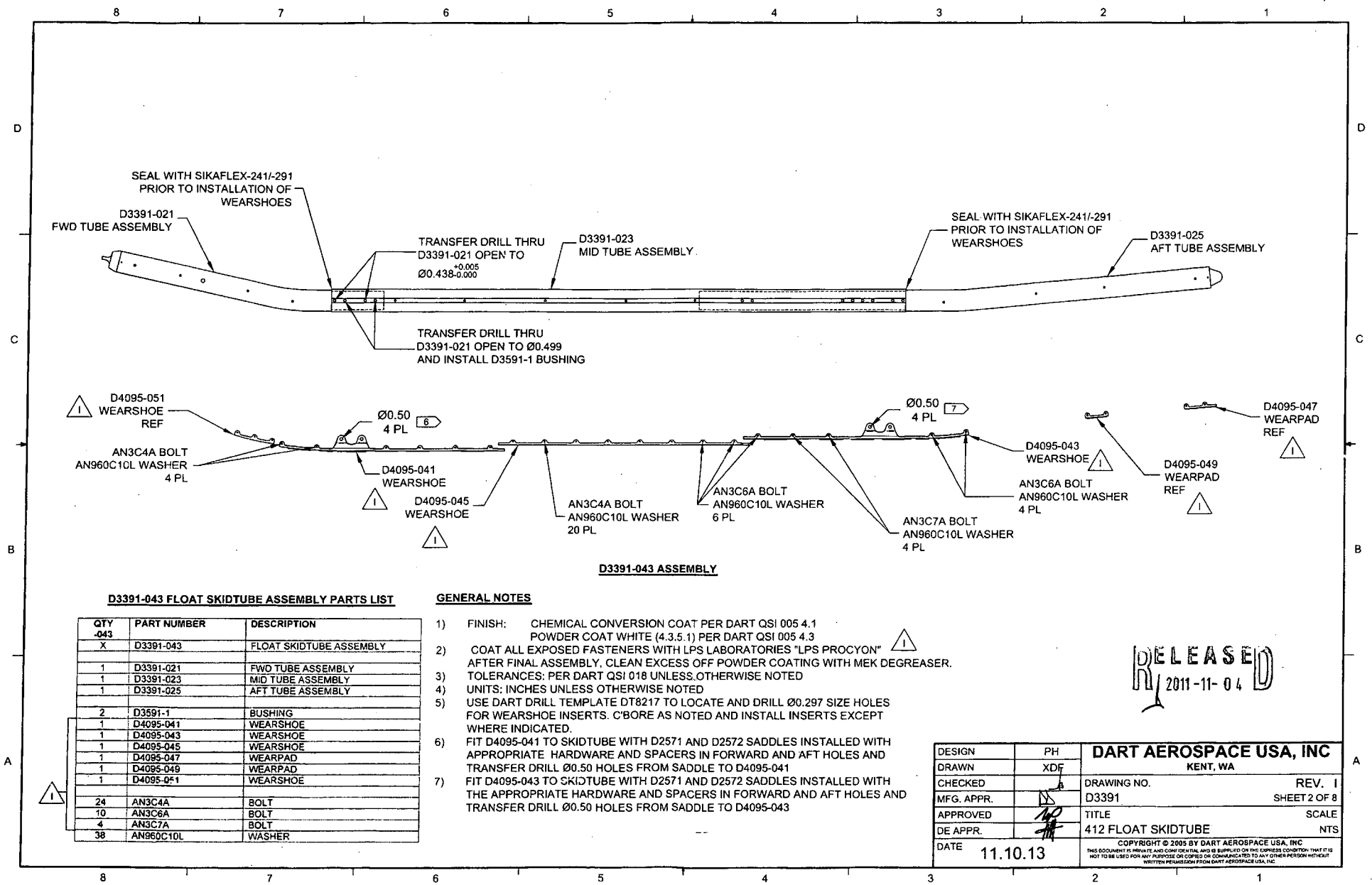
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D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARSHOE
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

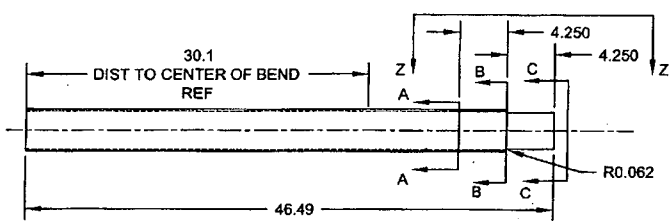
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

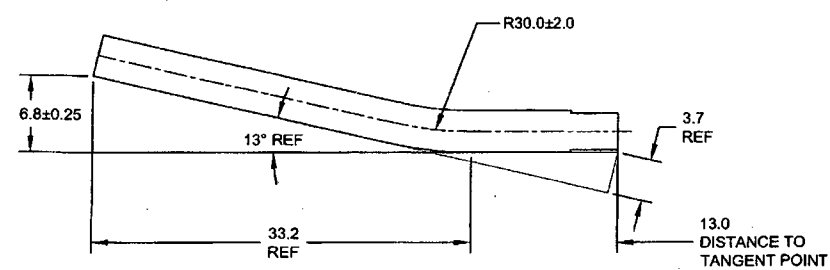
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

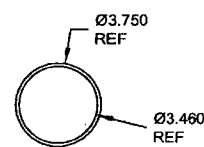
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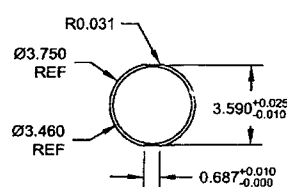
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



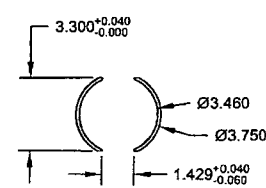
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



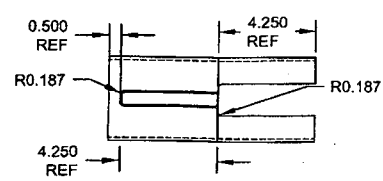
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

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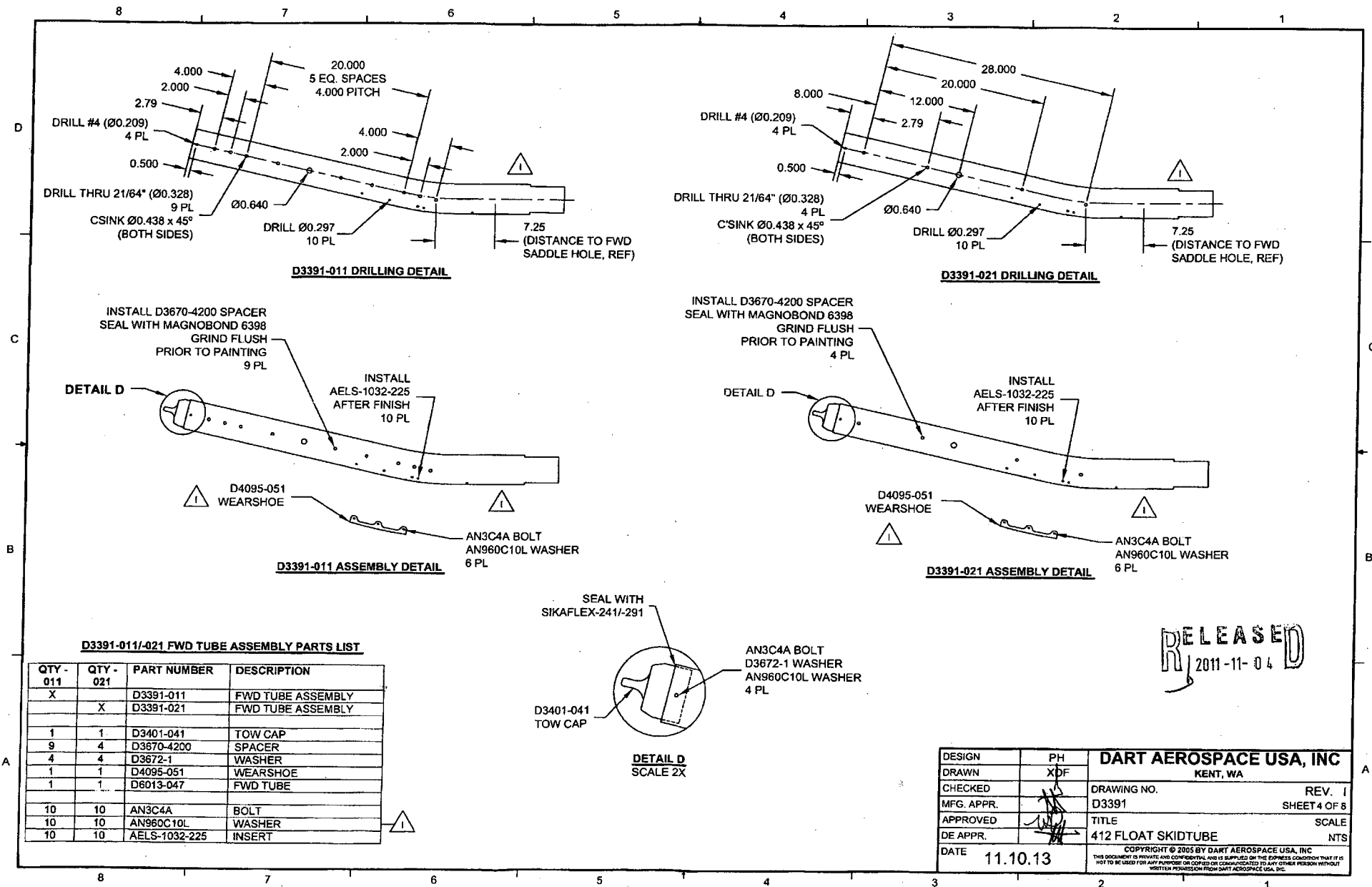
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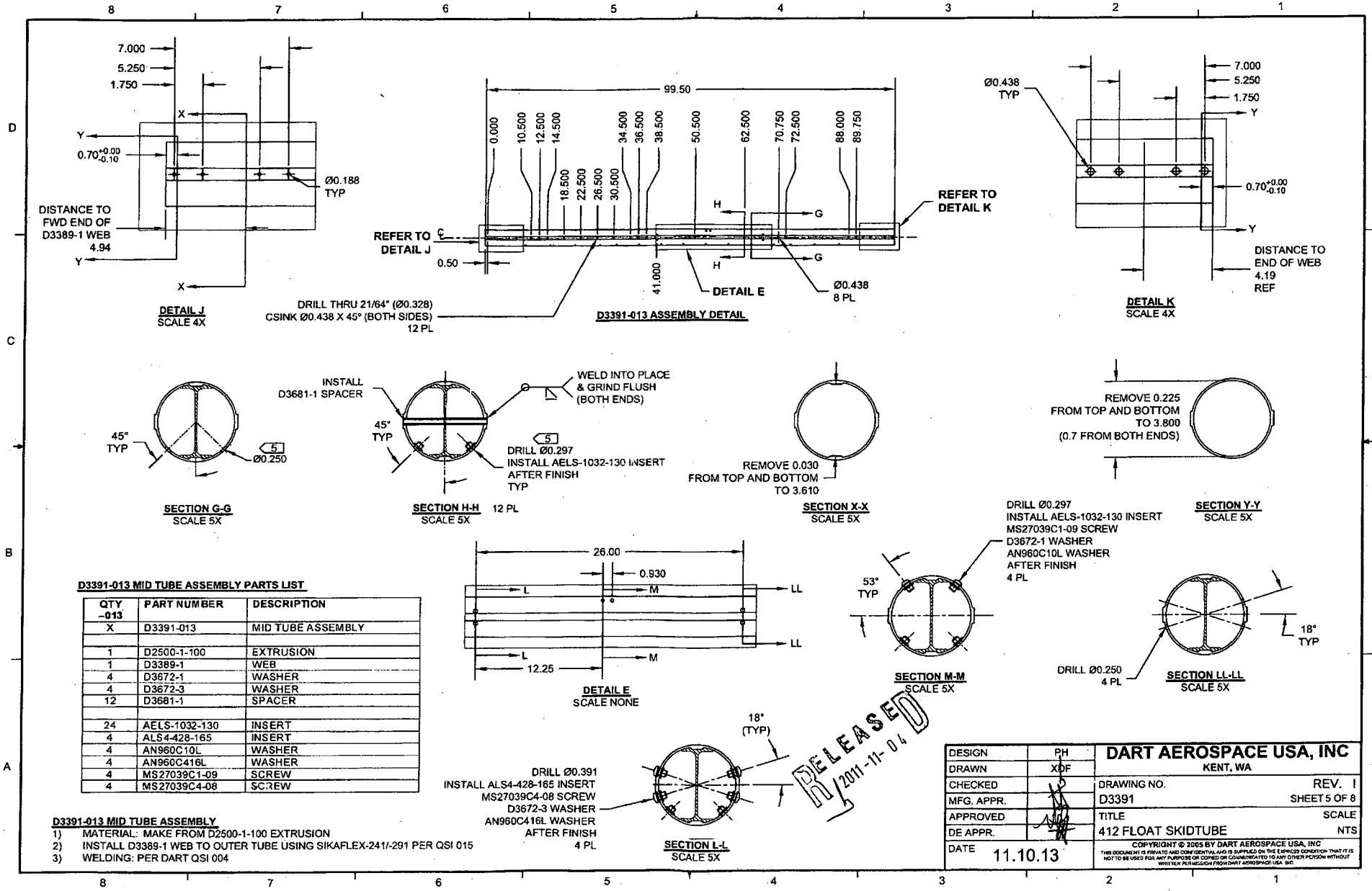
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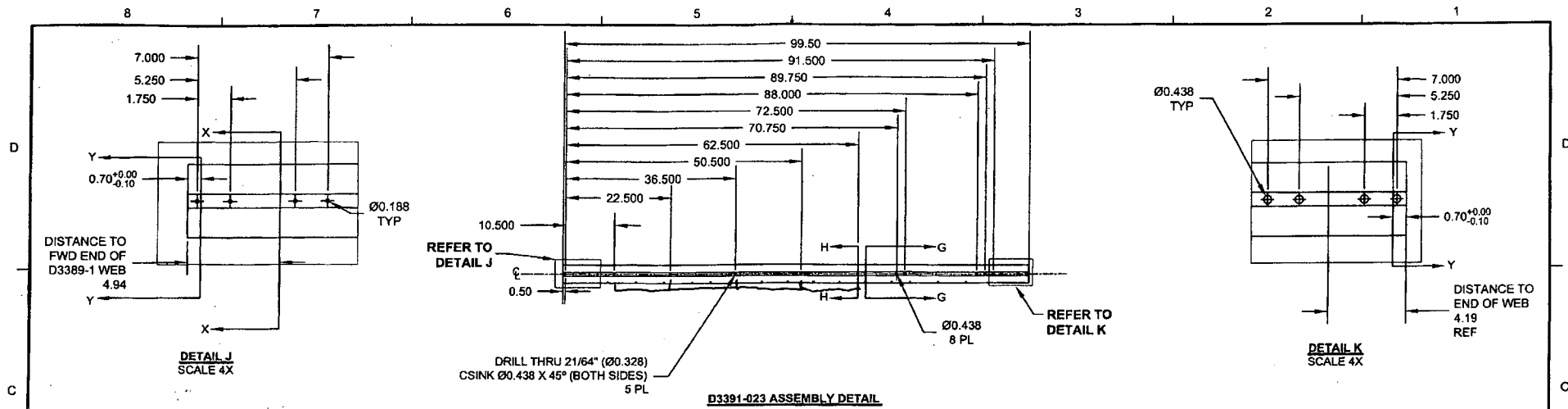
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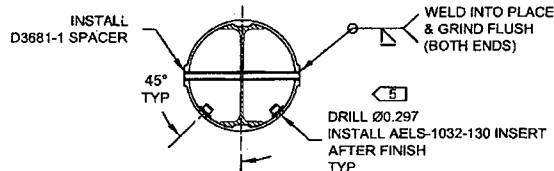
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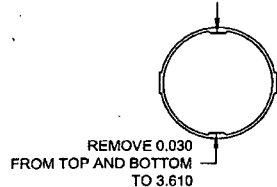
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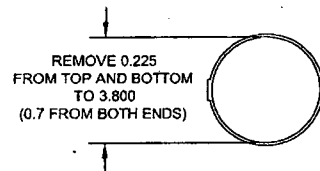
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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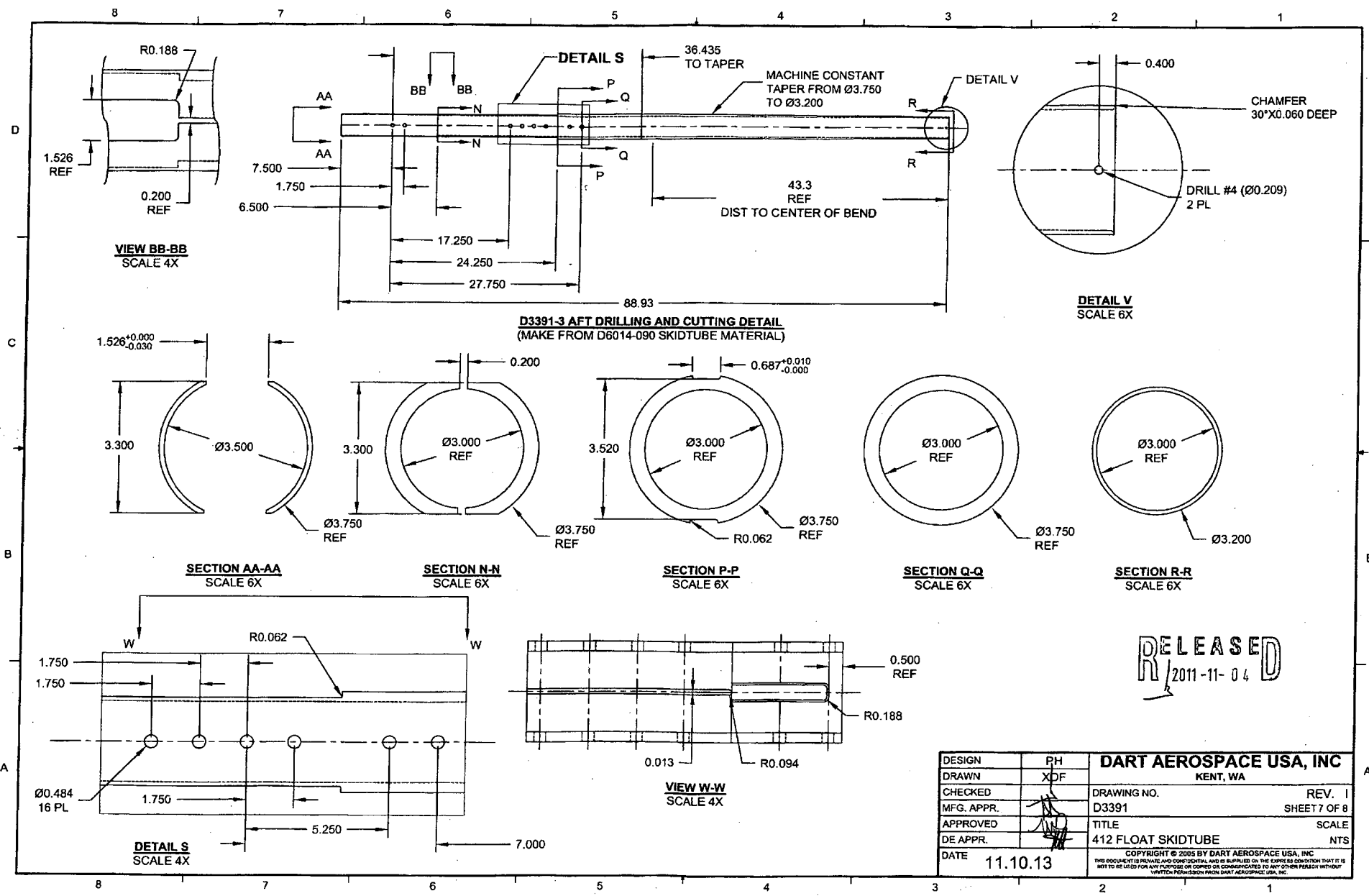
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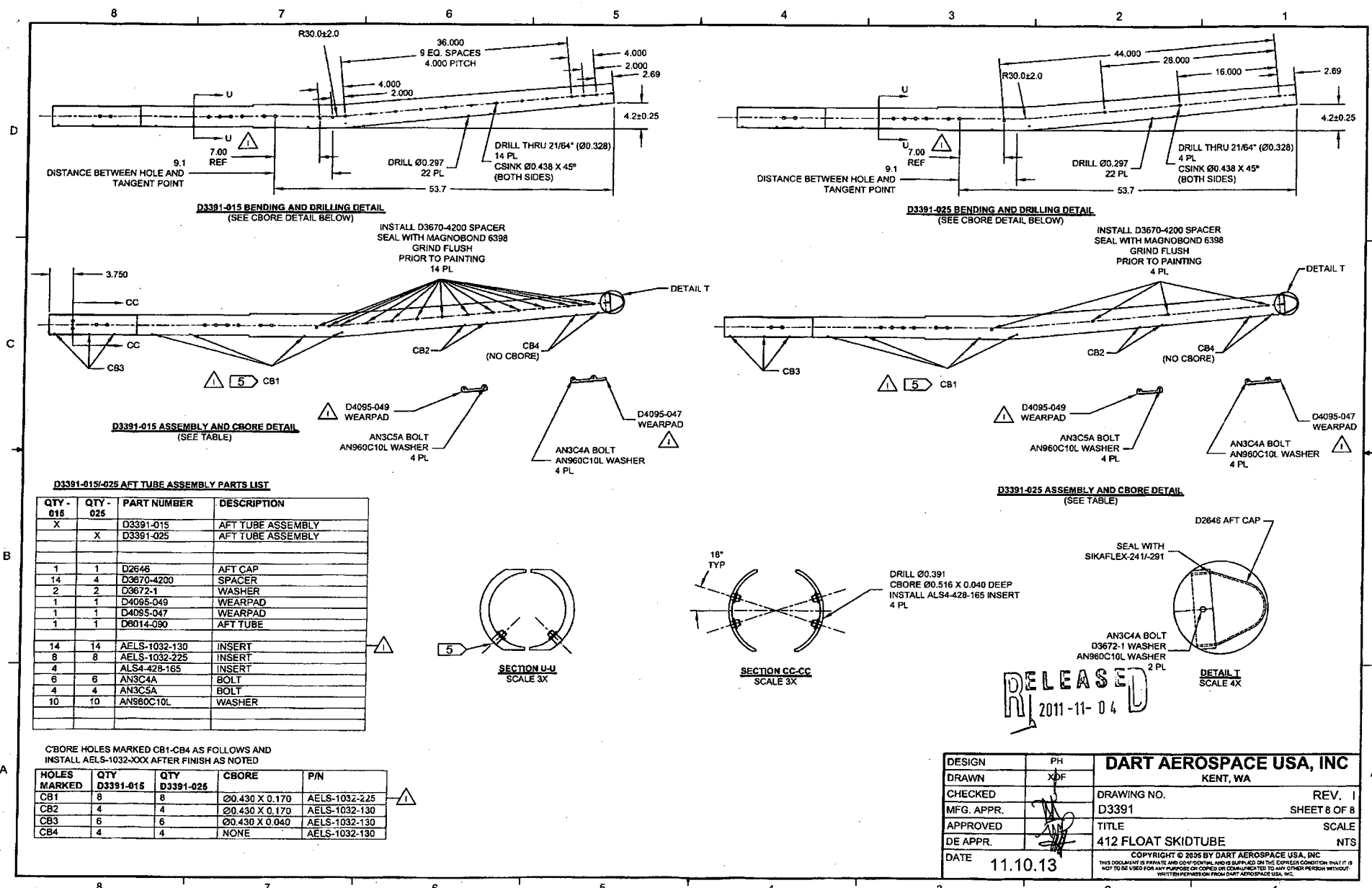
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NO. 284

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 80307
Part number: A3391-023
Description: Skid
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier David Lund Date of Test Coupon 12.03.09
Welder Barclay Elliott Date of Test Coupon 12.03.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld